

≡ CASE STUDY ≡

INDIANA HOMEOWNER FINDS DUCT SEALING THE KEY TO REAL ENERGY SAVINGS

Aerosealing Ductwork Succeeds In Reducing Home Energy Use After A Variety Of Other Fix-It Projects Failed

For homeowner Denise Roberts, winters in Indiana were not only cold, but also expensive. Since replacing her antiquated furnace with a modern heat pump and backup heater, she noticed her winter energy bills continued to climb. At the same time, rooms towards the back of her house never seemed to get enough heat to become really comfortable. Year after year, she would call experts to her home to help solve the problem and each year she would try something new – from having her roof fixed to insulating the attic, to encapsulating the crawl spaces and more. Her heating system was checked and rechecked but still, her winter heating bill soared to around \$2,000 – much higher than what others in her area seemed to be paying.

In Brief

Building: Rural two-story country home

Location: Columbus, Indiana

Aeroseal Contractor: Reliable Comfort Inc.

Goal: Reduce Energy Costs

Before Aeroseal: 750 CFM of leakage

After Aeroseal: 25 CFM of leakage

Results: Reduced winter energy bill by \$678.54/year.

Improved indoor comfort. Eliminated excessive dust issues.



When Reliable Comfort Inc. got a call from Denise last winter, they told her they were sure they knew how to solve her problem. Armed with building performance training from Comfort Institute, the HVAC pros at Reliable understood that a heater is only a part of a complete HVAC system and that properly functioning ductwork is critical to providing the efficiency that the heating unit is designed to deliver. Most importantly, Comfort Institute helped train and license Reliable to offer Aeroseal, a new duct sealing technology that could quickly and effectively seal a home's entire duct system in less than a day.

Unlike traditional duct sealing methods, aeroseal works from inside the ducts to find and seal leaks. This eliminates the need to tear into walls or other obstructions in order to access and fix the ductwork. The computerized system allows technicians to monitor the process, ensuring that the leaks are sealed.

The aeroseal team at Reliable arrived at Denise's home in the morning and was done by mid-day. Denise could feel the difference right away. All the rooms in her home were now getting the warm air they needed to be comfortable. A post-project analysis of her energy bills showed a reduction of more than \$650/year for winter heating alone. Similar savings is expected for the hot summer days as well.

“Actually seeing the diagnostics was great. It showed that duct leakage was unquestionably what was wrong and I could see the leakage rate fall as the sealing process continued. Not only is this saving me money each year and making my home much more comfortable, but I have also found that I don’t need to dust nearly as often. I can actually neglect dusting and no one knows!” In retrospect I wish we had done the aroesealing first. I recommend it.”

Denise R.
Homeowner

“It took a “whole-home” approach to energy efficiency to solve Denise’s problem. The fact is that most U.S. homes today have leaky ductwork that is robbing homeowners of both energy and comfort. Aroeseal technology makes it possible to effectively find and seal those leaks in a way that is fast and non-intrusive for the homeowner.

Aaron Ruddick
Co-owner
Reliable Comfort Inc.



Aroeseal – The Technology

In the aroeseal process, the sealant doesn’t coat the duct interior but instead, concentrates around the leak. An aerosol-mist of sealant is blown throughout the interior of the ductwork. The microscopic particles of sealant remain suspended in air until they reach a leak. Here they cling to the edge of the hole and then to other sealant particles until the leak is completely sealed.

- Developed at Lawrence Berkeley National Laboratory in 1994.
- Research for aroeseal technology was partially funded by the U.S. Department of Energy.
- Aroeseal is delivered as a non-toxic aerosol mist that seeks out and plugs leaks.
- Aroeseal has proven to be 95% effective at sealing air duct leaks.

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